Institut de recherche Robert-Sauvé en santé et en sécurité du travail

2005 Activity Report

The IRSST: your research engine for 25 years

2008-03943/

MESSAGE FROM THE PRESIDENT AND CEO

A TIME FOR CHOICES

The end of one cycle and the beginning of another. This accurately sums up the year 2005, which was distinctive in many respects. Highlighted by the IRSST's 25th anniversary, 2005 was first marked by the termination of the *2003-2005 Master Plan* and the *Increasing Research Partnerships* business plan. Charting the course of the *IRSST* for the past three years, these plans defined our orientations, established the framework for our action plans, and identified various methods, including partnerships, to help the organization better respond to the numerous changes facing workers and companies. Upon taking the helm of the IRSST in 2002, I indicated that I would carry out my duties in a spirit of continuity and that I would ensure that these plans translate into achievements. Thanks to the support of my colleagues and the quality and dedication of the personnel, we can state: mission accomplished!

Supported by action plans and rigorous follow-up, this *2003-2005 Master Plan* guided the IRSST's administrative decisions, projects and scientific and technical activities; all of its essential elements have been or are in the process of being implemented. This activity report spotlights various major achievements that distinguished fiscal 2005, including the abundant publication of research reports, the realization of an unparalleled number of environmental, toxicological and microbiological analyses by our Laboratory Services and Expertise team, as well as the signing of a new collective agreement for the personnel.

However, since every major organization needs a rudder and an itinerary, we also launched a new strategic development and positioning process in order to prepare ourselves to enter a new cycle and meet the needs of tomorrow. Known as Strategic Orientations for the Enhancement of Research, this initiative has yielded its first results. In addition to drawing a qualitative and quantitative profile of the years 1999-2004, it allowed an External Evaluation Committee (whose members, and particularly its Chair, Gretta Chambers, I would like to sincerely thank) to question the way in which the IRSST meets its mission's objectives in terms of capacity and performance. I received the committee's report at the very end of 2005, but I can state, here and now, that the observations are extremely positive and augur well for fine, new achievements. The external committee's assessments and the observations stemming from the profile will help us establish a development scenario for the next five years.

On the occasion of its 25th anniversary, the IRSST has therefore reached a point in its history where it must choose the path it plans to take between now and 2010. At the crossroads of its existence, it must determine in which current niches it will continue its activities. Which must be maintained and in which will it have to excel? Which new niches must be invested in and developed? And how will it meet the urgent needs and high expectations of its mandators and partners in the area of knowledge transfer? We have already begun to reflect on how to meet the challenges that await us in the area of strategic watch. On this issue as on many others, the choices will be decisive, since they will dictate the direction that we will take together in the future. As so eloquently stated during the debate on the motion adopted by the Québec National Assembly to highlight the IRSST's 25th anniversary, I will conclude by wishing a "long life to this wonderful institution"!

President and CEO

Diane Gaudet

2005 in Numbers

RESEARCH

178 projects were active in 2004.*

46 files were completed

58 files were approved, broken down as follows:
- 20 joint
- 13 external
- 25 internal

77 other projects were being developed.

82 partner organizations in the network were involved in the active projects in 2004.

31 committees of the CSST and its network, including regulatory committees, had at least one IRSST representative.

12 national and international standardization committees invited the IRSST to serve on them in an expert capacity.

31 scholarships were awarded, for a total of $418,400.*

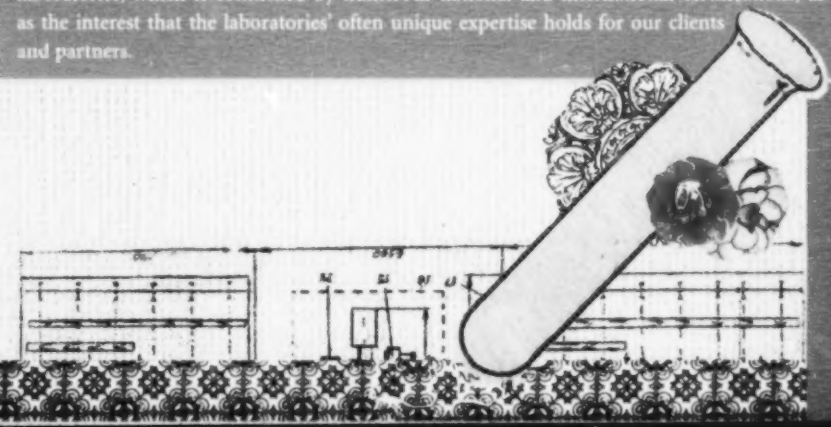
* Summaries of all projects carried out or funded by the IRSST, as well as the complete list of scholarship recipients, are available on the IRSST's Web site: www.irsst.qc.ca.

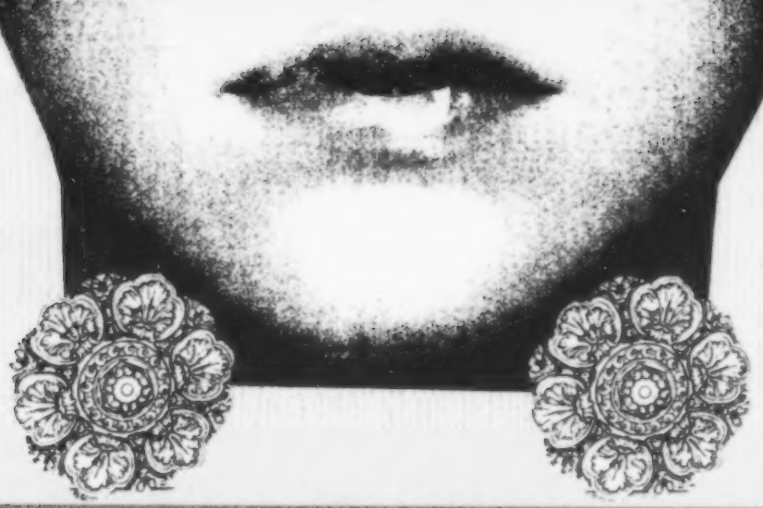
LABORATORY SERVICES AND EXPERTISE

70,982 environmental, toxicological and microbiological analyses were performed, **83%** of which were for our partners in the prevention-inspection network: CSST, local health and social services network development agencies, and joint sector-based associations.

4,717 hours were devoted to the calibration, maintenance and repair of direct-reading and sampling instruments, **85%** of which were for the prevention-inspection network.

The analytical production of Laboratory Services and Expertise jumped by 15% over the previous year, reaching an unparalleled level. This increase can be attributed to the growing demand from specialists in the Québec occupational health and safety network, under a service contract between the CSST and the IRSST, as well as from private clients. This indicator attests to the quality of the laboratories, which is confirmed by numerous national and international certifications, as well as the interest that the laboratories' often unique expertise holds for our clients and partners.





DISSEMINATION

65 IRSST publications
- 56 research reports and guides published by the IRSST.
- 9 synthesis reports published in collaboration with partners.

174 scientific publications (reading committees) related to projects carried out or financed by the IRSST:
- 75 periodical articles
- 93 articles published in conference proceedings
- 6 other publications, including book chapters, theses, etc.

60 presentations given by IRSST personnel or funded researchers at scientific conferences or events organized by partners.

23 non-technical articles published in *Prévention au travail*, the magazine published by the CSST and the IRSST, with a circulation of over 47,100.

8,791 publications distributed in response to requests.

48,745 downloads of research reports from the IRSST's Web site.

399,594 visits to the IRSST's Web site, representing an average of 950 visitors per day.

4,439 subscribers periodically receive news related to laboratory activities, new research projects and the latest publications via the electronic newsletter *Info IRSST*, prepared by the Communications Division.

Declaration of Data Reliability

As president and CEO, I am responsible for the information contained in this activity report. I attest to the accuracy of the information and the reliability of the controls carried out.

Recommended by the members of the Scientific Advisory Board and approved by the Board of Directors, this 2005 activity report faithfully describes the mission, vision and main achievements of the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST). It sets out indicators selected to assess production and provides accurate and reliable data on the results obtained.

I declare that I have every reason to believe that the facts and data provided in this activity report correspond to the situation as at December 31, 2005.

Diane Gaudet
President and CEO
IRSST

Table of contents

Declaration of Data Reliability 2

Message from the President and CEO 3

2005 in Numbers 4

2005 Highlights 6

Consolidating our research fields 6

Consolidating our strategic presence and our reference, expertise and transfer role 8

Increasing our research partnerships 11

Increasing our exchanges and our national and international influence 12

Adapting and consolidating our organization 14

Overview of the IRSST 17

Financing 17

Organizational chart 18

Board of Directors and Scientific Advisory Board 19

List of publications 20

2005 Highlights

Consolidating our research fields

A new field

Every year, thousands of workers who have suffered an occupational injury whose consequences compromise their professional reintegration benefit from rehabilitation services. The IRSST was already conducting projects to meet the needs of injured workers and professionals. But the size of the field and the number of claims justified the creation of a new research field: occupational rehabilitation.

A cohesive package including integrated programs, themes, orientations and an action plan was therefore presented and ratified by the Board of Directors. Centred around four programs, rehabilitation research aims to:

- Support early intervention in the clinical environment;
- Characterize the risks of prolonged disability among workers;
- Support the return to work processes carried out in companies;
- Identify factors for success in the CSST's interventions.

By focusing our rehabilitation activities within a single field, we will be better able to integrate the research and its results.

Statistical report

To better identify the risks of prolonged disability, the occupational rehabilitation field will be able to rely mainly on a statistical profile of workers whose injuries required recourse to physical, social or professional rehabilitation measures. This report, produced by three IRSST scientists, **Jean-François Godin** (1), **Raymond Baril** (2) and **Paul Massicote** (3), will help to expand and orient research in this field. The main results show that sex, age, company size, back pain and musculoskeletal disorders (MSD), relapse, as well as secondary sector jobs seem to be important aspects of the characteristics of a rehabilitation program's clientele. The study also confirmed that, among workers in rehabilitation, young people aged 15 to 19, as well as workers over age 55, have a higher average rate of permanent physical or psychological impairment than the average of workers.

Some initiatives over the months

January

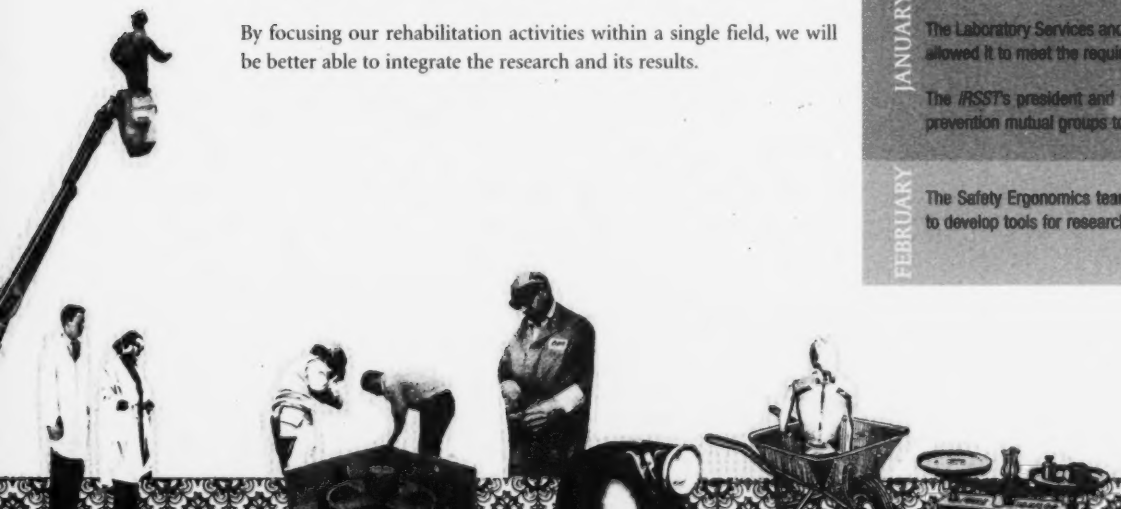
The IRSST's management met with the general managers of the joint sector-based associations to present the main research orientations for the year.

The Laboratory Services and Expertise team adopted the latest version of the Quality Assurance Document Management System, which allowed it to meet the requirements for ISO 17025 certification.

The *IRSST*'s president and CEO, Diane Gaudet, and the IRSST's knowledge transfer advisor, **Laurent Gratton** (4), collaborated with prevention mutual groups to expand the network of intermediaries.

February

The Safety Ergonomics team inaugurated a laboratory allowing it to continue research on back pain related to handling, as well as to develop tools for research in the workplace.



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Integrated programming

To better respond to our partners' complicated questions, considerable effort has been expended to ensure that research programs are integrated more effectively into each field. Thus, thematic programs have been established to better orient research projects. Promoting the achievement of concrete results, this practice is becoming increasingly common since, in 2006, nearly half of the projects will be integrated into thematic programs.

In addition to the ten already under way, no less than fifteen new thematic programs received the green light from decision-makers in 2005. Here is the list of programs, by research field:

Accidents

- Development and production of new occupational health and safety (OHS) indicators
- Young workers and OHS
  - good examples of learning environments
  - safe job integration
  - working conditions promoting the health of young workers
  - preventive approaches

Protective equipment

- Protective gloves and clothing
- Respiratory protection
- Falls from heights
- Shoring

Safety of industrial tools, machines and processes

- Assessment of risks associated with machines
- Lockout
- Maintenance
- Design of safe machines
- Control systems and automation

Chemical substances and biological agents

- Microbiological agents

Occupational rehabilitation

- Factors for success in the CSST's interventions
- Return to work processes carried out in companies
- Risks of prolonged disability among workers
- Early intervention in the clinical environment

Strategic watch

To gain a better overview of scientific breakthroughs, the development of OHS knowledge and emerging problems, researchers in each field did a follow-up of the literature in their niche of expertise. Need identification and integration efforts will continue and various mechanisms will be implemented in order to develop a structured scientific strategic watch process. The development and implementation of a surveillance and monitoring mechanism at the institutional level will allow the IRSST to better anticipate emerging problems and to integrate research results produced elsewhere by adapting them to the Québec reality.

An example of what institutional monitoring can generate is the literature review carried out in 2005 by **Claude Ostiguy** (3), in collaboration with the CSST, on the health risks associated with nanomaterials.

MARCH

With the collaboration of the National Jewish Medical and Research Center and the National Institute for Occupational Safety and Health (NIOSH), the IRSST instigated and hosted the *International Beryllium Research Conference– Be 2005*.

André Lan (1), of the Safety Engineering team, was appointed to the Canadian Standards Association's CSA Z259 fall protection technical committee. This committee develops and writes product standards and standards for testing these products for purposes of certification compliance.

As Chair of the International Prevention Education and Training Committee of the International Social Security Association (ISSA), Diane Gaudet, IRSST president and CEO, was presented the new agreement for improving the integration of occupational health and safety into professional and technical training. Signed by Gérard Bibeau, Chairman of the Board and CEO of the CSST, and Pierre Lucier, Deputy Minister of Education, this agreement will help ensure that all possible steps are taken so that young people arrive on the labour market with prevention-oriented attitudes, knowledge and skills.

1

André Van Neste (2), Vice-President, Technologies, at NANOX inc., was named member from the scientific and technical communities on the IRSST's Scientific Advisory Board. This appointment followed the departure of Charles E. Beaulieu who had sat on the board for nearly 15 years.

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APRIL

The IRSST welcomed 150 people to the forum *Les jeunes et la SST dans une société en mouvement (Young people and OHS in a changing society)*.

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New research needs

Some issues do not lend themselves easily to just one field. This is particularly the case for occupational psychological health (OPH) and the health and safety of young workers. The IRSST produced a report on OPH issues and problems, which will allow it to identify research orientations and target its actions. Regarding OHS among young people, several achievements are noteworthy. In addition to developing four thematic programs, the IRSST participated in the public consultation conducted by the Québec government on the development of a youth action strategy. Written by **Marie Laberge** (1) and **Élise Ledoux** (2) of the IRSST, with the collaboration of the CSST's Action Jeunesse team, a brief was submitted to the government by Jacqueline Caboret, Director of the CSST's Prevention-Inspection Branch, and Jean-Claude Martin, Director of the IRSST's Quality and Special Projects Management Division. Entitled *Vers une culture de la prévention* (*Toward a Prevention Culture*), this important brief focused mainly on the special role of young people as workers in a changing working world and on the possible impacts on their health and safety. The document is available at www.irsst.qc.ca in a new section: Opération JeuneSST.

2

Geneviève Marchand (3), on the IRSST's Occupational Hygiene team, was appointed to the Sampling and Analysis of Mold standardization committee of the American Society for Testing and Materials, which held its very first meeting in Nevada in April. The group in which she works focuses on mold analysis methods, with the priority of producing a standardized method.

APRIL

In the wake of Be 2005, a post-conference non-technical activity was organized for some fifty of our partners and intermediaries.

The ISO committee (TC 146/SC2/WG2) on analytical methods for workplace atmosphere air quality, of which *IRSST* chemist **Pierre Larivière** (4) is a member, decided to meet in Montréal to discuss and produce standardized methods. On this occasion, **Jacques Lesage** (5), Director of Laboratory Services and Expertise, and chemist **Sasan Aubin** (6), presented the IRSST's procedure for calculating analytical uncertainties.

4 5 6

7

MAY

The IRSST's participation in the conference of the Association québécoise pour l'hygiène, la santé et la sécurité du travail was significant: seven presentations, two training sessions and one booth. This year, the organizers underlined the IRSST's 25th anniversary at the event's closing banquet. In addition, during the conference, the Jotvire-Aumont award was presented to **Andrè Bureau** (7) of McGill University, who has been an IRSST collaborator from the very beginning.

Consolidating our strategic presence and our reference, expertise and transfer role

In addition to its research role, the IRSST must constantly be present among its network of partners to ensure that knowledge fuels their prevention strategies.

In 2005, the IRSST remained very involved in the priority issues of the Commission de la santé et de la sécurité du travail (CSST), mainly by supporting, through its work, the action plan on machine safety and by pursuing beryllium research. It should also be noted that the IRSST participated actively in rehabilitation discussions. Thus, the initiative taken by the CSST to prevent chronicity among injured workers was prompted by the IRSST's research results. The CSST's empirical observations and the IRSST's research have played a key role in the CSST's move to prevent chronic disability.

Programmable control systems

The IRSST is participating in a dozen standardization committees. Given the importance of this activity, in 2005 the IRSST took stock of its achievements over the past few years and proposed orientations for the future. Thus, the work done in the Safety of Industrial Tools, Machines and Processes field, as well as the technical guide developed by **Joseph-Jean Paques** (8) of the IRSST and **Louis Germain** (9) of the CANMET Energy Technology Centre, led to the adoption of a new article on programmable control systems during the revision of the *Regulation respecting occupational health and safety in mines*. This work not only served as a reference for the new mining regulation for Québec, but will also have an impact on that of the other Canadian provinces.

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Role of the laboratories

In addition to this work are the efforts of Laboratory Services and Expertise, whose personnel provide daily support to professionals in the public prevention network. In 2005, the Sampling Guide for Air Contaminants in the Workplace was updated. Under the direction of chemist **Daniel Drolet** (1) and technician **Guylaine Beauchamp** (2), this revision required the collaboration of some twenty IRSST scientists, professionals and technicians. Cited as a reference document in the *Regulation respecting occupational health and safety* (RROHS), this guide supports the actions of professionals by describing the strategy and methods for measuring workers' exposure to gases, fumes, vapours or dusts.

Quality approach

By establishing strict quality assurance mechanisms, the laboratories want to guarantee their clients that each analytical result produced by their personnel was obtained according to well-established and proven procedures. Thus, the laboratories not only want to maintain their numerous national and international certifications, but they also plan to broaden the scope of these certifications based on emerging problems and the new priorities of the IRSST's partners. As a result, in 2005, the laboratories subscribed to the new quality control program of the American Industrial Hygiene Association (AIHA) for the characterization of mold spores.

In addition, the person responsible for laboratory quality, chemist **Marie-Claude Barrette** (7), is supervising an initiative aimed at ensuring the relevance and quality of analytical methods over a five-year period. In 2005, most of the solvent analysis methods were successfully updated according to the requirements of the existing quality system.

MAY

Thirteen members of the IRSST's personnel were speakers or co-signers of papers at the 73rd annual conference of the Association francophone pour le savoir, an event that featured some 1,000 communication activities in 59 scientific disciplines.

The Natural Sciences and Engineering Research Council of Canada and the company Best Glove Canada injected $300,000 over three years into a project on solvent-polymer interactions. This project was conducted by **Toan Vu Khanh** (3), the Chair for research on protective materials and equipment used in occupational health and safety; professor **Julian Zhu** (4); and **Jaime Lara** (5) of the IRSST's Safety Engineering team.

Jean Dussault (6), of the Fédération des travailleurs et travailleuses du Québec (FTQ), was appointed to the IRSST's Scientific Advisory Board. He will replace his colleague, Serge Trudel, who resigned after having been a member of the very first Scientific Advisory Board in 1980 and having sat on the Board since 1989.

The IRSST and Jean Gaulin, Chairman of the Board of Directors of NanoQuébec, signed a partnership agreement aimed at developing and disseminating knowledge in order to prevent occupational accidents and diseases associated with nanotechnologies, a rapidly developing field.

The IRSST participated in the organization of the first francophone convention on upper limb musculoskeletal disorders, which took place in Nancy, France.

Toxicological interactions

Utility development constitutes a valuable aid for network professionals. Spearheaded by **Adolf Vyskocil** (8) of the Université de Montréal and **Daniel Drolet** (1) of the IRSST, in collaboration with the CSST, one project led to the development of a database on the toxicity of chemical mixtures. In addition, with the assistance of computer analyst François Lemay, a tool was designed to assess the risk represented by exposure to a mixture of several chemical substances in the workplace. Work on interactions is generating considerable interest. A cooperation agreement was signed with the faculty of medicine of Charles de Hradec Králové University so that Czech professionals can use the assessment tool. In addition, the Institut Pasteur de Lille, in France, added the research report *Impact of toxicological interactions on the management of multiple contaminant exposure situations* to its reference library.

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Utility development constitutes a valuable aid for network professionals. Spearheaded by **Adolf Vyskocil** (8) of the Université de Montréal and **Daniel Drolet** (1) of the IRSST, in collaboration with the CSST, one project led to the development of a database on the toxicity of chemical mixtures. In addition, with the assistance of computer analyst François Lemay, a tool was designed to assess the risk represented by exposure to a mixture of several chemical substances in the workplace. Work on interactions is generating considerable interest. A cooperation agreement was signed with the faculty of medicine of Charles de Hradec Králové University so that Czech professionals can use the assessment tool. In addition, the Institut Pasteur de Lille, in France, added the research report *Impact of toxicological interactions on the management of multiple contaminant exposure situations* to its reference library.

Biological hazards

The extensive research and activities carried out over the years by the Occupational Hygiene team on the risks associated with waste collection, waste water treatment, and recycling and composting centres have provided the CSST's intervention program with field data on biological hazards. Due to his expertise, scientist **Jacques Lavoie** (1) participated in the development of a training activity and in the training of 180 professionals from the OHS network: doctors, nurses, hygienists and CSST inspectors. In addition to making it possible to update knowledge related to infectious agents and disease prevention measures, this initiative was designed to train professionals to take action among workers in order to reduce the risks of the transmission and development of microbial infections.

Transfer and promotion

More than ever, the IRSST feels that knowledge transfer must be intimately linked to research. During the past year, **Alain Lajoie** (2), **Jean-Guy Richard** (3), Steeve Vigneault and Laurent Gratton of the Operations Division, joined the team of Mario Roy, from the Université de Sherbrooke, to examine various schools of thought in the area of knowledge transfer and sharing procedures. A literature review identified six themes ranging from the definition of transfer and the ways of achieving it, to the communities of practice. Concurrently, the interdisciplinary research consortium, made up of the IRSST, the Université de Sherbrooke's Business Faculty, and the SafetyNet research group in Newfoundland, continued its work on knowledge transfer, work accidents and their context. All this work was taken into account when the IRSST launched a review of all of its transfer mechanisms in order to facilitate the transmission and appropriation of results so as to ensure that knowledge benefits workplaces.

In addition, among the actions taken in 2005 to promote scientific and technical production, the Communications Division, with the assistance of the Public Relations Chair of the Université du Québec à Montréal, developed a marketing plan to ensure better dissemination of research results.

JUNE

Richard Martel, of the Institut national de recherche scientifique – Eau, Terre, Environnement, received the Thomas Keefer Medal awarded annually by the Canadian Society for Civil Engineering, for two articles published in the *Canadian Geotechnical Journal*. These articles described the work funded by the IRSST on explosives-related carbon monoxide production.

The Safety Engineering team inaugurated its new laboratory, where it will be able to carry out risk analyses, conduct lockout tests, and modify control systems on different machines, without having to go to company premises each time.

Temporary assignment was the subject of a symposium organized jointly by the IRSST and AGN Consulting, an event that attracted 200 people.

The Director of Quality and Special Projects Management, Jean-Claude Martin, presented three Université de Sherbrooke students, namely **Adam Cann** (4), **Elaine Faber** (5) and **Marie-France Coutu** (6) with an IRSST honorary certificate attesting to the excellence of their synthesis work on the return to work, in the context of the CIHR's strategic training program in occupational disability prevention. Funded by the Canadian Institute of Health Research (CIHR) and the IRSST, this graduate program is aimed at students at the doctoral and postdoctoral levels.

Successful transfers

Maintaining the employment relationship and promoting a return to work

An example of a successful transfer was definitely that involving the promotion of the project coordinated by **Dr. Susan Stock** (7) of the Institut national de santé publique du Québec, and aimed at planning and establishing a modified work program for workers with musculoskeletal disorders (MSDs). An interdisciplinary project involving the IRSST's **Raymond Baril** (8) and **Claire Lapointe** (9) led to the production of a reference guide, along with a set of intervention tools, to support companies wishing to create a return to work program for occupational injury victims. Useful for instructors and professionals, health and safety committees or human resource specialists, this guide was the subject of a

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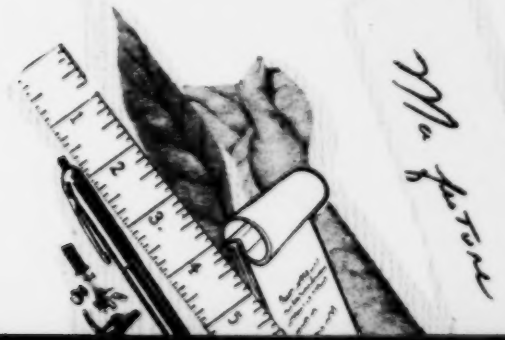
Public libraries

The production of the report *Integration of MSD prevention in designing a layout: the case of public libraries* is another fine example of transfer. The presence of representatives of the CSST, the Association paritaire du secteur affaires municipales (APSAM), the Ministère de la Culture et des Communications, the City of Montréal, the Syndicat des fonctionnaires municipaux de Montréal, the Association des bibliothèques publiques autonomes du Québec, and the Regroupement des centres régionaux de services aux bibliothèques publiques on a follow-up committee greatly facilitated the appropriation of results by the community. To optimize the transfer, the research team headed by **Marie Bellemare** (1) of Laval University had access to a guide entitled *The public library, a workplace – Ergonomics applied to a service counter layout project*. Supplementing two technical guides already published by APSAM, this document, accompanied by an awareness-raising poster and videocassette, constitutes an effective learning tool for facilitating the ergonomic layout of a service counter. During the year, Élyse Ledoux of the IRSST's Work Organization team and her collaborators provided training at the symposium of the Corporation des bibliothécaires professionnels du Québec, presented the results at the conference of the Association pour l'avancement des sciences et techniques de la documentation, and gave more than half a dozen scientific lectures.



SEPTEMBER

A framework partnership agreement between the Health and Safety Laboratory (HSL) in the United Kingdom and the IRSST was signed by HSL Chief Executive, Dr. David Ruchebusch, and IRSST president and CEO, Diane Gauvin. This agreement promotes broader exchanges between the two research centres, which agreed to share human, financial and physical resources in order to maximize knowledge development.

Marie Bégin (3), Director of the Occupational Hygiene team, sat on the Comité sur les médicaments antinéoplasiques et dangereux (Antineoplastic and dangerous drugs committee). Its mandate is to produce a prevention guide for the personnel of Québec's health institutions regarding the safe handling of these substances. The ASP - Affaires sociales, the Association des hôpitaux du Québec, Hôpital Sainte-Justine, the Association des pharmaciens, and the Corporation d'hébergement du Québec are represented on this committee.

From September 16 to 22, on the occasion of the 17th Annual World Congress on Safety and Health at Work, IRSST president and CEO Diane Gauvin presented the result transfer strategy used at the IRSST. Bringing together more than 3,000 OHS professionals in Orlando, USA, this event made it possible to exchange ideas, research aspects and the best practices regarding the latest OHS issues.

OCTOBER

Maureen Shaw, the president of the Industrial Accident Prevention Association (IAPA), and her collaborators met with the IRSST's management to assess the impacts of the partnership agreement between the two organizations regarding knowledge transfer.

Increasing our research partnerships

Well aware that an organization cannot be completely self-sufficient, the IRSST included partnerships as one of the orientations of its master plan and established a 2003-2005 business plan aimed at increasing partnerships. Objectives: to increase our research capacity, intensify our influence and be more sensitive to emerging problems.

Co-financing

No fewer than 23 projects have been initiated since the business plan was developed. During the 2003-2005 period, these projects represented a total investment of $8,425,000. Of this amount, $1,685,000 came from the IRSST's coffers and $6,740,000 was invested by our partners. The multiplicative effects are impressive: for each dollar invested by the IRSST, the partners contributed over $4, increasing our research capacity accordingly. In 2005 alone, 14 projects were launched as the result of partnerships. The financial contribution of partners stood at $2,818,000, while that of the IRSST totalled $760,000.

Here is a list of the main financial partners with projects under way in 2005.

1. Canadian Institutes of Health Research (CIHR)
2. Natural Sciences and Engineering Research Council of Canada (NSERC)
3. Workplace Safety and Insurance Board (WSIB-Ontario)
4. Research and Development Institute for the Agri-Environment (RDIA)

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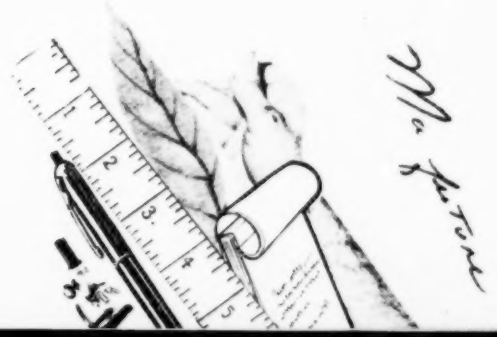

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8. Institut national de recherche scientifique – Eau, terre et environnement
9. CANMET's Mining and Mineral Sciences Laboratories – of Natural Resources Canada (MMSL-CANMET)

Structuring agreements

Partnerships can generate benefits that are not financial but just as interesting, either due to their structuring effects and the possibilities that they offer in terms of influencing research orientations and sharing human resources, or due to their networking or influence potential.

A few examples from 2005 are a good illustration:

- Signing of a fourth agreement with the Institut national de recherche et de sécurité (INRS) of France. This agreement in the area of biometrology consisted mainly in establishing an international francophone multidisciplinary bibliographic monitoring network for the biological surveillance of workers' exposure to chemicals
- Addition of the Institut universitaire romand de santé au travail (Switzerland) as signatory and partner to the biometrology agreement
- Conclusion of a framework partnership agreement with the Health and Safety Laboratory in the United Kingdom that will help improve the IRSST's positioning in the European Union

NOVEMBER

On November 28, the IRSST celebrated its 25th anniversary. On this occasion, Christiane Ayotte, the Director of the Doping Control Laboratory of the INRS – Institut Armand-Frappier, was invited to give a lecture.

For 10 days, 12 professionals and managers of the SESI, an agency that provides social services to Brazilian companies, visited our premises to take part in a training session on the development of an integrated statistical information system. This session also included a segment on needs identification and prioritization and program evaluation.

The poster *Development of a sampling and analysis method for the overall evaluation of acrolein in the workplace* earned Mathieu Fournier (1), a UQAM master's student and IRSST scholarshipholder since 2004, first prize for poster presentations at the Town Colloquium. Huu Van Tra from UQAM and Claude Ostiguy co-signed the winning poster.

The IRSST's Board of Directors ratified the introduction of the new research field of Occupational Rehabilitation.

DECEMBER

The IRSST's president and CEO joined the Groupe du travail sur les aspects sociaux, éthique et environnementaux des nanotechnologies (Working group on the social, ethical and environmental aspects of nanotechnologies). The mandate of this group was to develop a strategy and action plan targeting the development and organization of research expertise and training on the social, ethical and environmental aspects necessary for the safe and responsible development of nanotechnologies. It was co-chaired by Louise Dandurand, president of the Fonds de recherche sur la société et la culture, and Sylvie Dillard, president and CEO of the Fonds québécois de recherche sur la nature et les technologies.

- Signing of agreements with NanoQuébec. Even though it previously had no involvement in OHS, this agency has agreed to participate in the production of a literature review and a good practices guide in the field of nanotechnologies and to promote the implementation of prevention methods in companies upon their inception.
- The IRSST, the Canadian Labour Congress and the Workplace Safety and Insurance Board (WSIB-Ontario) teamed up with the Institute of Neurosciences, Mental Health and Addiction of the Canadian Institutes of Health Research (CIHR) to participate in the *Mental Health in the Workplace Research Initiative*.

Increasing our exchanges and our national and international influence

In 2005, the IRSST made the most of various opportunities to further promote and confirm the validity of its scientific and technical achievements and increase its exchange networks: scientific publications, guest lecturing, presence at major events, exchange activities, receiving of foreign researchers, organization of large-scale conferences, etc.

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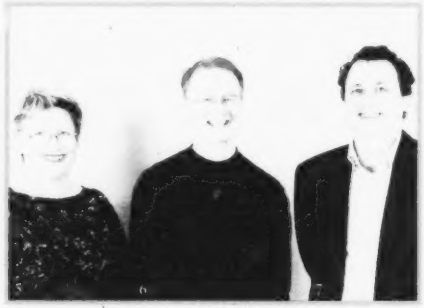
Be 2005: a success at every level

Organized by the IRSST, in partnership with the National Jewish Medical and Research Center and the National Institute for Occupational Safety and Health (NIOSH) of the United States, the 5th *International Beryllium Research Conference – Be 2005* is a fine example of an event promoting exchanges and influence. The first four times this conference was held, fewer than 100 people attended, but the one in Montréal attracted more than 250 participants over three and a half days. Under the scientific direction of IRSST researcher **Chantal Dion** (1), the event allowed about 30 researchers from eight countries to share their findings with an audience consisting mainly of public health professionals, employer and union representatives, members of joint sector-based associations and many hygienists from companies that use beryllium. By assuming this scientific leadership, the IRSST has once again demonstrated the usefulness of research as a means of supporting the activities of the CSST, which has made beryllium one of its priorities.



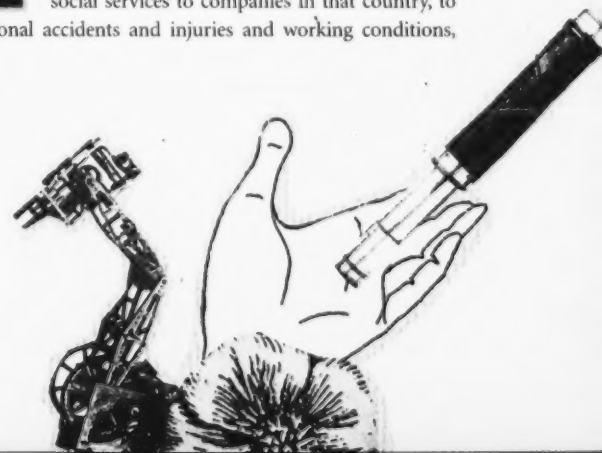
MSDs in French

Under the theme *Une recherche performante pour une prévention efficace (Productive research for effective prevention)*, the first francophone convention on upper limb musculoskeletal disorders took place in Nancy, France. Organized jointly by the INRS, the National Agency for the Improvement of Working Conditions, the Institute for Monitoring Medical Development, and the IRSST, this event, which brought together 600 participants, was an overwhelming success while at the same time demonstrating the importance of the role and vitality of the IRSST's research on the comprehension and prevention of the MSD phenomenon. In addition to being part of the organizing committee, the IRSST delegated five scientists, namely **Denys Denis** (2), **Alain Delisle** (3), **Georges Toulouse** (4), **Esther Cloutier** (5) and **André Plamondon** (6), as lecturers or workshop moderators. As well as participating on a panel, president and CEO Diane Gaudet, accompanied by the Director of the Safety Ergonomics team, **Louis Lazure** (7), used the occasion to meet with the CEO of the INRS, Jean-Luc Marier, and his team in order to review the partnership agreements between the INRS and the IRSST.

Support for Brazilians

The IRSST played a role in the improvement of occupational health and safety in Brazil by collaborating on an international project featuring partners such as the Canadian International Development Agency (CIDA) and the Brazilian Cooperation Agency. Financed mainly by CIDA, this $4 million project had two objectives: to help improve OHS in Brazilian industries and to adopt effective and sustainable OHS programs in SMEs.

In Canada, a consortium comprised mainly of Ryerson University, the Industrial Accident Prevention Association (IAPA), the Canadian Centre for Occupational Health and Safety (CCOHS) and the IRSST collaborated on the project. One of the three programs of this project, under the direction of **Jean-Claude Martin** (8) and **François Hébert** (9) of the IRSST, aimed mainly to improve the ability of Brazilian decision-makers at SESI, an organization that offers social services to companies in that country, to collect, record and analyze data on occupational accidents and injuries and working conditions, particularly in SMEs.



Prevention mutual group meetings

In an effort to expand its network of intermediaries and find fertile ground for research results in activity sectors lacking joint sector-based associations, the IRSST met with representatives of two of the largest prevention mutual group managers: AON Consulting, and Groupe AST. Associating with a prevention mutual manager was a first for the IRSST. The benefits included a research activity involving restaurant owners represented by Groupe AST and the promotion of research results on the slipperiness of floors involving the restaurant owners' mutual. As for AON Consulting, about 20 of their preventionists came to our premises to establish ties with the IRSST's scientists and learn about their work. In addition, the *Temporary assignment – a win-win solution* symposium, organized by AON Consulting in collaboration with the IRSST, allowed over 200 people to familiarize themselves with the document *Work-related Musculoskeletal Disorders - Guide and Tools for Modified Work*. The mutual also invited, as a panellist, Andrée Bouchard, Secretary of the Health and Safety Confederal Committee of the Confederation of National Trade Unions (CNTU) and member of the IRSST's Board of Directors.

Adapting and consolidating our organization

Strategic orientations for the enhancement of research

In 2005, the main steps in the Strategic Orientations for the Enhancement of Research initiative were carried out. A 1999-2004 institutional assessment was drawn up documenting four main areas of concern:

- External opportunities and threats
- Organizational motivation
- Organizational capacity
- Organizational performance

This assessment was then handed over to an External Evaluation Committee, which submitted its report at the very end of the fiscal year. Chaired by the Chancellor of McGill University, Gretta Chambers, this committee consisted of the following members: Camille Limoges, John Frank, Jean-Claude André and Gilles Dussault. Drawing on their broad experience in the research and health fields, these prominent figures evaluated the performance and relevance of the IRSST's scientific activities in order to guide management in its positioning decisions.

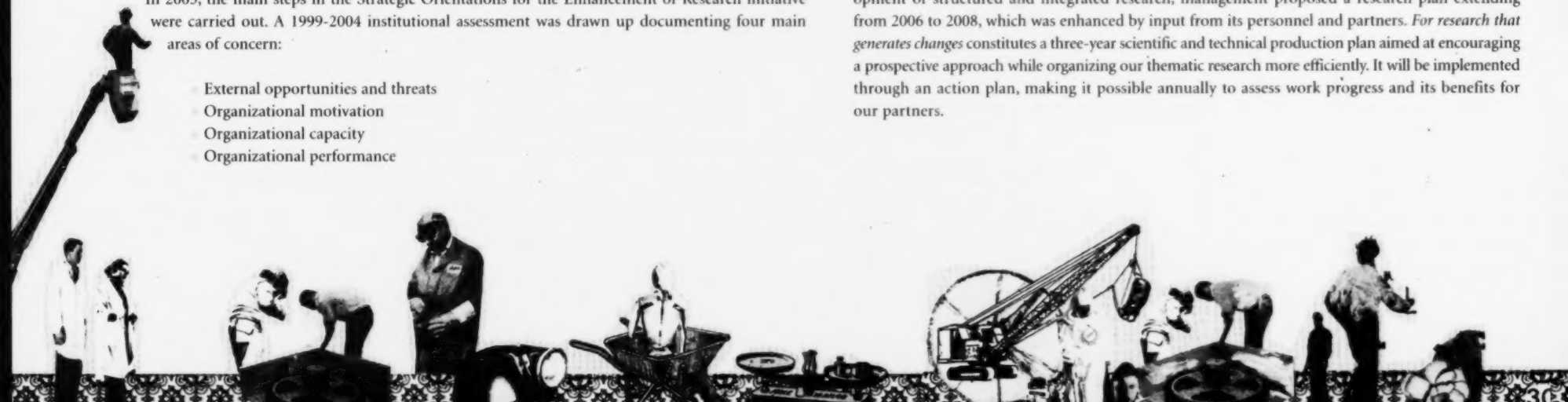
Management has already targeted three avenues of development for the next five years:

1. strengthening research and expertise capacity
2. structuring and implementing a strategic watch activity
3. systematically considering the potential for transferring knowledge resulting from research activities and expertise.

During the first few months of 2006, the development scenario will be modelled into a 2006-2010 strategic plan and submitted to the Board of Directors for approval.

Three-year research plan

The IRSST previously orchestrated its scientific activities around an annual research plan. In the wake of the strategic positioning process and in the light of comments made to promote the development of structured and integrated research, management proposed a research plan extending from 2006 to 2008, which was enhanced by input from its personnel and partners. *For research that generates changes* constitutes a three-year scientific and technical production plan aimed at encouraging a prospective approach while organizing our thematic research more efficiently. It will be implemented through an action plan, making it possible annually to assess work progress and its benefits for our partners.



Hiring

During 2005, the IRSST injected new blood into its research team by hiring two researchers and two scientific professionals. The Work Organization team was enhanced by the presence of researcher **Iuliana Nastasia** (1) and the Occupational Hygiene team by researcher **Ali Bahloul** (3). The professional **Chantal Gauvin** (4) added her expertise to that of the Safety Engineering team. For her part, scientific advisor **Annie Lafontaine** (2) joined the Operation Division's Customer Service team and will also manage the IRSST's Graduate Studies Scholarship Program.

New systems

To adapt the organization and help it better meet the needs of its personnel and clients, the Information Technologies and Laboratory Services and Expertise teams continued to collaborate on preparations for the implementation of the Système d'information en santé au travail (SISAT, Occupational Health Information System). This interactive system will allow the health network to send their analysis requests to our laboratories by e-mail.

In addition, the Finance and Administration Division launched a project to review its administrative computer systems in order to better integrate the information related to its responsibilities in the areas of finance, human resources and physical resources.

One of the highlights of 2005 for IRSST employees was the signing of a new collective agreement. In effect until 2008, this new contract improves salary and prescriptive work conditions for employees and establishes the framework for regular reports promoting good relations between the employer and the union.

Health and safety of personnel

Concerned about integrating the values and mechanisms of the *Act respecting occupational health and safety*, the IRSST has established a health and safety committee (HSC). Every year, the HSC sets prevention, training and information objectives. In 2005, six reports were entered in the accident, incident and first aid register. The HSC took action on each of its reports.

Of note, the HSC implemented a respiratory protection program and offered training on mask maintenance and fit to users of this type of protective equipment. In 2005, the IRSST's track record surpassed that of organizations operating in the same sector of activity, with the result being that its assessment rate was 4% lower than the unit rate.

Adjunct professors

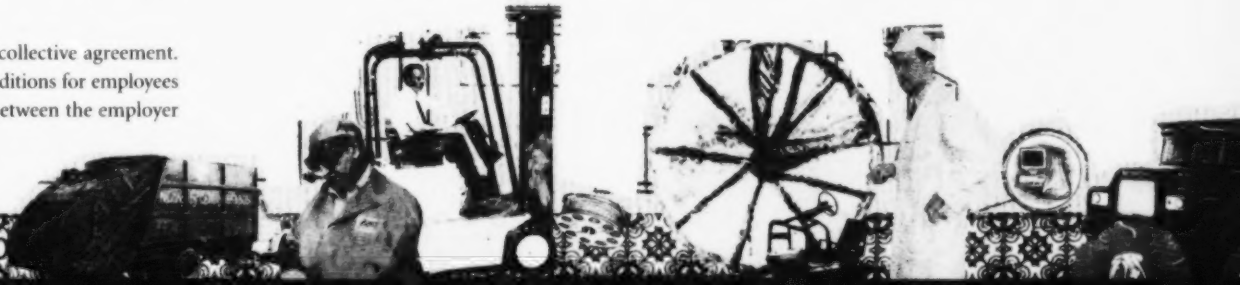
Recognition of the expertise of its personnel and their contribution to knowledge development is also expressed through an institutional presence in the academic community. The IRSST's performance in this regard is outstanding, since most of its researchers had adjunct professor status in Québec or Canadian universities in 2005.

As an adjunct professor, a researcher can mainly supervise graduate and postgraduate students, be a thesis director, and qualify for financing from funding agencies.

Here is a list of adjunct professors by research team at the IRSST:

Safety Ergonomics Team

Alain Delisle, Ph.D., Department of Mathematics and Industrial Engineering, École Polytechnique
André Plamondon, Ph.D., School of Rehabilitation, Université de Montréal, and Human Kinetics, Laurentian University



- *Marie St-Vincent,* Ph.D., Department of Mathematics and Industrial Engineering, École Polytechnique
- *Christian Larivière,* Ph.D., Department of Community Health Sciences, Université de Sherbrooke
- *Denys Denis,* Ph.D., Department of Biological Sciences, Université du Québec à Montréal
- Georges Toulouse, DESS (Ph.D. level), Department of Kinanthropology, Université du Québec à Montréal

Safety Engineering Team

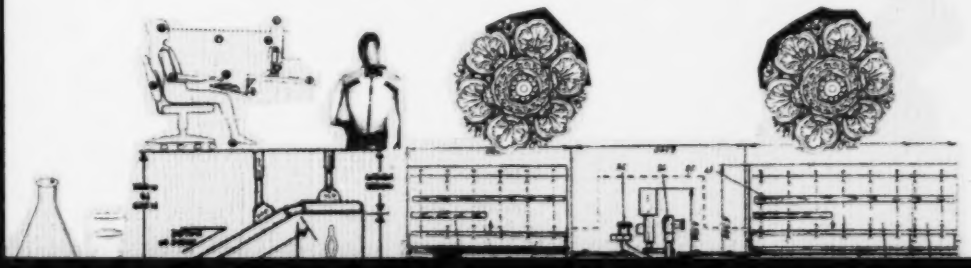
- *Paul-Émile Boileau,* Ph.D., Department of Mechanical and Industrial Engineering, Concordia University
- *Jaime Lara,* Ph.D., Department of Mechanical Engineering and Chair of Research on Protective Materials and Equipment Used in OHS, École de technologie supérieure
- *Laurent Giraud,* Jr. Eng., Ph.D., Department of Mechanical Engineering, Université Laval
- *Pierre Marcotte,* Jr. Eng., Ph.D., Department of Mechanical and Industrial Engineering, Concordia University
- *Hugues Nelisse,* Ph.D., Department of Mechanical Engineering, Université de Sherbrooke

Work Organization Team

- *Élyse Ledoux,* Ph.D., Department of Kinanthropology, Université du Québec à Montréal, and School of Industrial Relations, Université Laval
- *Raymond Baril,* Ph.D., Department of Community Health Sciences, Université de Sherbrooke
- *Esther Cloutier,* Ph.D., Department of Organization and Human Resources, Université du Québec à Montréal
- *Iuliana Nastasia,* Ph.D., Department of Mathematics and Industrial Engineering, École Polytechnique

Occupational Hygiene Team

- *Ginette Truchon,* Ph.D., Department of Environmental and Occupational Health, Université de Montréal



Scholarships

In 2005, 31 students from eight universities received scholarships from the IRSST by setting themselves apart through the academic excellence of the work they presented. Thus, $418,400 was awarded for the training of new researchers in OHS.

Since its creation, the IRSST has conferred some 850 scholarships totalling nearly $13 million to over 360 master's, doctoral and postdoctoral students. The results of a survey coordinated by **Carole Bellazzi** (1), scientific advisor at the IRSST, indicate that two-thirds of the 240 ex-scholarship recipients still work in the OHS field, representing a substantial retention rate.

Student trainees

Over the past three years, the IRSST has always had at least a dozen student trainees among its ranks. In fact, in 2005 alone, no fewer than 18 students were trained by IRSST researchers or managers. Six were supervised by members of the Occupational Hygiene team, five by Laboratory Services and Expertise, four by the Safety Engineering team, two by the Safety Ergonomics team, and one by the Work Organization team.

Celebrating its 25th anniversary

In March, activities surrounding the IRSST's 25th anniversary were launched in the presence of the 250 participants at the *International Beryllium Research Conference.* This event also marked the unveiling of the slogan: *The IRSST – Your research engine for 25 years.*

Best wishes came in from directors of OHS research institutes in Brussels, Berlin, Rome, Bonn, Budapest and Moscow, underlining the IRSST's major contribution to knowledge development and its influence on the international scene. These were in addition to those received from our partners.

In December, the Québec Minister of Labour, **Laurent Lessard** (2), presented the Chamber with the following motion: "That the National Assembly of Québec, on the occasion of the IRSST's 25th anniversary, highlight this event by witnessing the vitality of the research and the usefulness of its findings as a means of reducing occupational injuries and eliminating hazards at source, and by acknowledging the tenacity and quality of the personnel working there."

Overview of the IRSST

The IRSST team is made up of some 134 individuals, including scientific personnel consisting of 87 researchers, professionals and technicians from various disciplines such as ergonomics, industrial hygiene, chemistry, physics, engineering, sociology, anthropology and demography. Coordinated by the Operations Division, internal research personnel belong to one of the following five teams: Safety Ergonomics, Work Organization, Safety Engineering, Occupational Hygiene, and Laboratory Services and Expertise. Funded research projects are coordinated by scientific advisors on the Customer Service team. Quality and ethics are the responsibility of the Quality and Special Projects Management team.

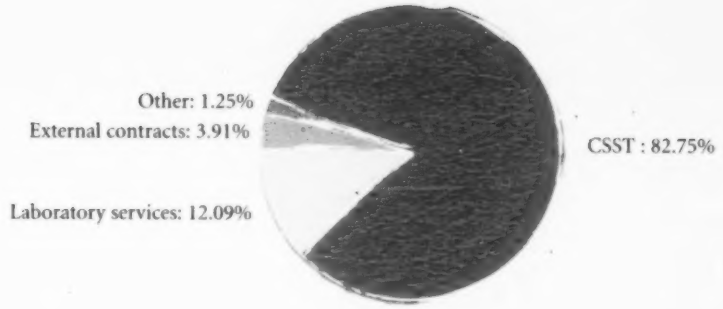
The IRSST's external network consists of some 300 researchers from universities, research centres and private firms.

Jean-François Godin, of the IRSST's Work Organization team, earned a Ph.D. in Applied Human Sciences from the Université de Montréal. He received honourable mention for the quality of his thesis entitled: "*Immigrants and work in Montréal: the dynamics of the first ten years in their professional development*".

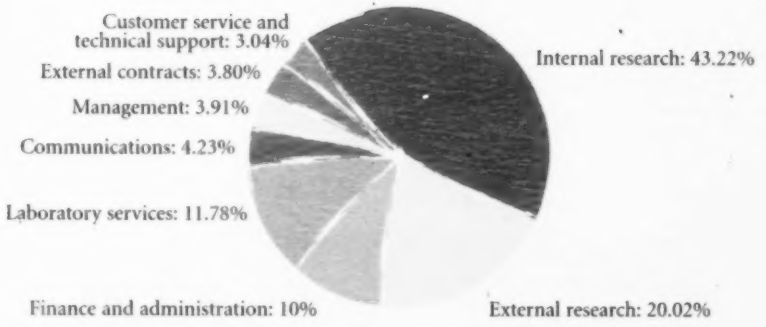
Pierre Marcotte, of the IRSST's Safety Engineering team, obtained a Ph.D. from the Virginia Polytechnic Institute and State University. His thesis focused on the development, optimization and analysis of distributed vibration absorbers.

Financing

Revenues $21,076,551



Expenses $21,053,217



Organizational Chart

Board of Directors
Executive Committee
Gérard Bibeau, Chairman

President and CEO
Diane Gaudet

Scientific Advisory Board

Quality and Special Projects Management
Jean-Claude Martin

DIVISIONS

Finance and Administration
Human Resources
Physical Resources
Jean-Guy Martel

Operations
Customer Service (acting)
Alain Lajoie

Communications
Jacques Millette

Financial Resources
Louise Lafontaine

Work Organization
Denise Granger

Safety Ergonomics
Louis Lazure

Safety Engineering
Paul-Émile Boileau

Occupational Hygiene
Nicole Goyer

Laboratory Services and Expertise
Jacques Lesage

Information Technologies
Jacques Roy

Our Boards

*The **Board of Directors** determines the IRSST's orientation, development framework and funding.*

In 2005, the IRSST's Board of Directors met five times.

Chair
Gérard Bibeau

Worker Representatives
Michel Arsenault
Andrée Bouchard
Pierre Dupuis
Claude Faucher
Jean Lavallée
Henri Massé
Roger Valois

Employer Representatives
François Cliche
Franco Fava
Gaston Lafleur
Sylvain Lebel
François-E. Pelletier
Jean-Paul Robin
Gilles Taillon

Observer
Daniel Charbonneau

Irsst Management
Diane Gaudet

*The **Scientific Advisory Board** advises the president and chief executive officer. Its mandate is to assess the relevance, importance and scientific quality of internal and external research projects and programs.*

In 2005, the members of the IRSST's Scientific Advisory Board met eight times (seven regular meetings and one special meeting).

Chair
Diane Gaudet

Employer Representatives
Robert Borduas
Richard Lapointe
Roger M. Laporte
Alain Neveu

Worker Representatives
Micheline Boucher
Jean Dussault
Daniel Flynn
Robert Guimond

Members of the Scientific and Technical Communities
Jean-Marc Brodeur
Christine Colin
Mireille Mathieu
Yves Rousseau
R. Charles Terreault
André Van Neste

Observers
Guylaine Rioux
Alain Lajoie

Appointments	*Departures*	*Renewals*
Jean Dussault	Alain Albert	Micheline Boucher
André Van Neste	Charles E. Beaulieu	Daniel Flynn
	Serge Trudel	R. Charles Terreault

List of publications

(Related to projects either carried out or financed by IRSST)

IRSST Publications

All IRSST publications are peer-reviewed.

BÉGIN D., BEAUDRY C., GÉRIN M. *La substitution des solvants par le carbone de propylène*, Bilans de connaissances, Rapport B-070, 2005, 43 pages.

BÉGIN D., HENG S., GÉRIN M. *La substitution des solvants par le lactate d'éthyle*, Bilans de connaissances, Rapport B-069, 2005, 45 pages.

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BELLEMARE M., BEAUGRAND S., CHAMPOUX D., LARUE C., MASSICOTTE P., GONELLA M. *Étude de la problématique SST des opérateurs du métro et des possibilités de réaménagement des loges de conduite*, Études et recherches, Rapport R-431, 2005, 177 pages.

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BOUTIN M., LESAGE J., OSTIGUY C., BERTRAND M.J. *Identification et quantification des isocyanates générés lors de la dégradation thermique d'une peinture automobile à base de polyuréthane*, Études et recherches, Rapport R-418, 2005, 55 pages.

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PLAMONDON A., DELISLE A., LARUE C., DESJARDINS P., MCFADDEN D., LARIVIÈRE C., GAGNON D., IMBEAU D. *Développement d'un instrument de mesure pour quantifier les postures et les déplacements du tronc en milieu de travail*, Études et recherches, Rapport R-423, 2005, 74 pages.

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BRUN J.-P. *Mental health at work ...from defening to solving the problem - What causes the problem - The sources fo workplace stress* - Chaire en gestion de la santé et de la sécurité du travail dans les organisations - Université Laval / IRSST, Rapport R-427-2, 2005, 24 pages.

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STOCK, S., BARIL R., DION-HUBERT C., LAPOINTE C., PAQUETTE S., SAUVAGE J., SIMONEAU S., VAILLANCOURT C. *Work-related Musculoskeletal Disorders - Guide and Tools for Modified Work* - Direction de santé publique de Montréal / IRSST, Guide, 2005, 63 pages.

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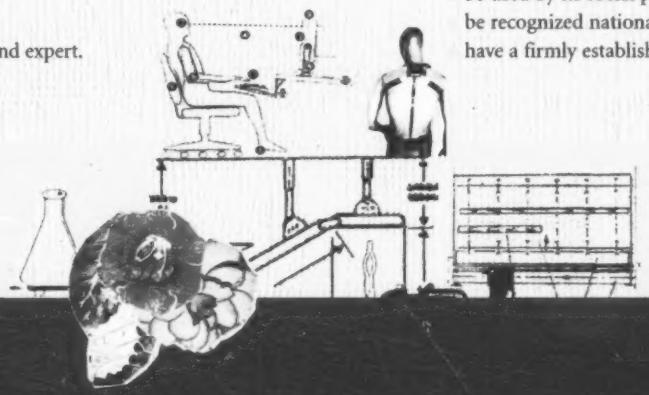

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